COMMUNICATIONS SYSTEM AND METHOD UTILIZING CENTRALIZED SIGNAL PROCESSING

ABSTRACT OF THE DISCLOSURE

A communications system and method performs centralized signal processing on received audio signals. A plurality of terminals are coupled to a processing switch via links. The terminals can be, for example, dedicated speakerphones, desktop handsets, or personal computers with audio capabilities. The links can be wired or wireless, can carry analog or digital signals, and can be shared with other users in a network. The switch receives the audio data from the terminals, processes the data according to desired acoustical procedures, creates one or more output mixes, and provides the output mixes to the appropriate terminals. The operation of the processing switch is controlled by a communications support module (CSM) which can receive, process, and send data to/from multiple terminals simultaneously. The CSM receives audio signals from the terminals. The CSM uses stored room models holding room model information including data and/or filters representing the acoustic properties of the terminal and/or the environment surrounding the terminal to process the audio signals. Signal processing (SP) modules provide a pool of SP power from which the CSM can draw to process audio signals received from or being sent to the terminals. The CSM uses the SP modules to perform signal processing including acoustic echo cancellation, automatic gain control, noise reduction. The CSM also uses a mixing module to perform signal mixing.

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